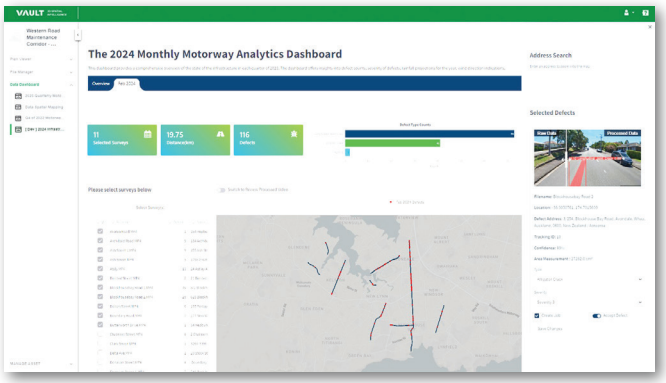
USE CASE 1

Highway Defect Detection using AI

Problem Statement

Our client utilizes multiple systems and platforms to maintain and manage defects, which has led to significant inefficiencies and complexities in the defect management process.

Currently, the process of reviewing defects is manually driven and excessively lengthy, which delays critical updates and resolutions. Similarly, accessing surveys related to these defects is also handled manually, leading to further inefficiencies and potential inaccuracies. This situation creates unnecessary complications, slows down operations, and impacts our ability to maintain high standards of quality and safety.



VAULT'S DELIVERIES	VAULT'S IMPACT
• Ingest monthly video surveys from 980km of networks for AI road defect detection. • Using data to improve the job management process and planning for minor and major works using Vault spatial mapping. • Near real time video survey access through AI recommender system by relevancy and address search.	• Improve and enhance the decision making process with integrated operational tools onto a single platform that provides a holistic view of operations. • The response time to operational and safety issues are significantly reduces with quick defect identification and centralized data. • More efficient and accurate defect management leads to safer operational practices, reducing the incidence of accidents and improving safety records and meet industry safety standards and regulations.

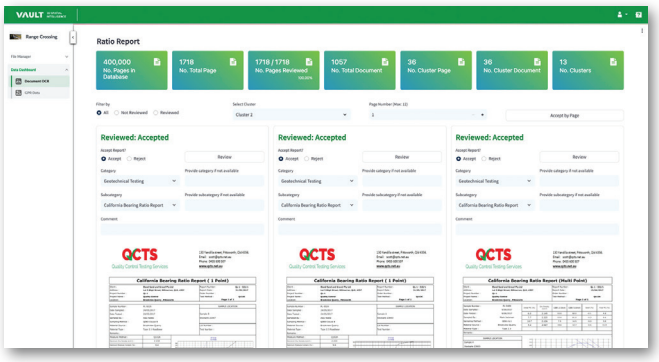
USE CASE 2

Data Ingestion & Retrieval using Vector Database

Problem Statement

Our client is grappling with a significant challenge during the construction handover period: efficiently managing and accessing valuable information from 1 million documents.

These documents are crucial for the seamless transition of project ownership and operational control but are currently scattered across various storage formats and locations. This disorganisation substantially hinders the ability to quickly locate and utilise specific documents, potentially leading to project delays, increased costs, and communication breakdowns between stakeholders.



VAULT'S DELIVERIES	VAULT'S IMPACT
• Utilised OCR and AI to unpack and categorise 1 million pages of PDF in 20 days with no need for additional head count. • Document search engine using AI semantic search (keywords, sentences) on 1 million pages in vector database. • Utilised AI to identify and cluster the documents without human interaction for further information extraction and geospatial location.	• Significant cost Reduction in workforce (5 PTEs for 6 months) using compute processing for data extraction. • Significant enhancement in accessing and retrieving meaningful information from the vector database • Huge Improvement in data accuracy compared to error prone to human entry and organisation